

30

## SEQ ID NO. 1

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
L	A	V	V	A	R	A	V	K	D	V	A	P	F	G	V	X	Y	D	T	K	T	L	G	N
26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
N	L	G	G	Y	A	V	P	N	Q	L	G	L	L	D	G	G	X	D	W	T	M	I	X	K
51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
N	S	M	V	D	V	K																		

## SEQ ID NO. 2

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
G	P	P	L	A	P	V	T	E	A	P	A	T	S	L	Y	T	I	P	F	H	H	G	A	A
26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
X	V	L	D	V	X	S	S	X	L	L	W	X												

TOP SECRET 5263360

SEQ ID NO. 3

AA :

MFKFKKKFLV GLTAAFMSSIS MFSATASAAG TDYWQNWTDG GGTVNAVNGS GGNYSVNWSN  
TGNFVVGKGW TTGSPFRTIN YNAGVWAPNG NGYLTLYGWT RSPLIEYYVV DSWGTYRPTG  
TYKGTVKSDG GTYDIYTTTR YNAPSIDGDN TTFTQYWSVR QSKRPTGSNA AITFSNEVNA  
WKSHGMNLGS NWAYQVLATE GYKSSGSSNV TVW

SEQ ID NO. 4

DNA :

1 ATGTTTAAAGT TAAAAAGAA ATTCTTAGTT GGATTAACGG CAGCTTTCAT GAGTATCAGC  
61 ATGTTTTTCGG CAACCGCCTC TGCAGCTGGC ACAGATTACT GGCAAAATTG GACTGACGGG  
121 GCGGGGACAG TAAACGCAGT CAATGGCTCT GCGGGAAATT ACAGTGTTAA TTGGTCTAAT  
181 ACCGGGAATT TCGTTGTTGG TAAAGGCTGG ACTACAGGCT CGCCATTTAG AACATAAAC  
241 TATAATGCCG GTGTTTGGGC GCCGAATGGC AATGGATATT TAACTTTATA TGGCTGGACG  
301 AGATCGCCCC TCATCGAATA TTATGTGGTG GATTCATGGG GTACTTACAG ACCTACCGGA  
361 ACGTATAAAG GTACCGTAAA GAGTGATGGA GGTACATATG ACATATATAC AACGACACGT  
421 TATAACGCAC CTTCATTGA TGGCGATAAC ACTACTTTTA CGCAGTACTG GAGTGTCCGC  
481 CAGTCGAAGA GACCGACCGG AAGCAACGCT GCAATCACTT TCAGCAATCA TGTTAACGCA  
541 TGGAAGAGCC ATGGAATGAA TCTGGGCAGT AATTGGGCTT ATCAAGTCTT AGCGACAGAA  
601 GGATATAAAA GCAGCGGAAG TTCTAATGTA ACAGTGTGGT AA

TOTAL: 576556

SEQ ID NO. 5

Bacillus subtilis wild type xylanase :

AA :

MFKFKKQFLV GLSAAALMSIS LFSATASAAS TDYWQNWTDG GGI VNAVNGS GGNYSVNWSN  
TGNFVVGKGW TTGSPFRTIN YNAGVWAPNG NGYLTLYGWT RSPLIEYYVV DSWGTYRPTG  
TYKGTVKSDG GTYDIYTTTR YNAPSIDGDR TTFTQYWSVR QSKRPTGSNA TITFSNRVNA  
WKSHEGMNLGS NWAYQVMATE GYQSSGSSNV TVW

SEQ ID NO. 6

DNA :

1 ATGTTTAAGT TTA AAAAGAA TTTCTTAGTT GGATTATCGG CAGCTTTAAT GAGTATTAGC  
61 TTGTTTTTCGG CAACCGCCTC TGCAGCTAGC ACAGACTACT GGCAAAATTG GACTGATGGG  
121 GGCGGTATAG TAAACGCTGT CAATGGGTCT GCGCGGAATT ACAGTGTTAA TTGGTCTAAT  
181 ACCGGAAATT TTGTTGTTGG TAAAGGTTGG ACTACAGGTT CGCCATTTAG GACGATAAAC  
241 TATAATGCCG GAGTTTGGGC GCCGAATGGC AATGGATATT TAACTTTATA TGTTTGGACG  
301 AGATCACCTC TCATAGAATA TTATGTAGTG GATTCATGGG GTACTTATAG ACCTACTGGA  
361 ACGTATAAAG GTACTGTAAA AAGTGATGGG GGTACATATG ACATATATAC AACTACACGT  
421 TATAACGCAC CTTCCATIGA TGGCGATCGC ACTACTTTTA CGCAGTACTG GAGTGTTCCG  
481 CAGTCGAAGA GACCAACCGG AAGCAACGCT ACAATCACTT TCAGCAATCA TGTGAACGCA  
541 TGGAAGAGCC ATGGAATGAA TCTGGGCAGT AATTGGGCTT ACCAAGTCAT GGCGACAGAA  
601 GGATATCAAA GTAGTGGAAG TTCTAACGTA ACAGTGTGGT AA

0000155-100101

Mutant xml :

SEQ ID NO. 7

AA :

MFKFKQNFV GLSAALMSIS LFSATASAAS TDYWQNWTDG GGTVNAVNGS GGNYSVNWSN  
TGNFVVGKGW TTGSPFRTIN YNAGVWAPNG NGYLTLYGWT RSPLIEYYV DSWGTYRPTG  
TYKGTVKSDG GTYDIYTTTR YNAPSIDGDR TTFTQYWSVR QSKRPTGSNA AITFSNEVNA  
WKSEGMNLGS NWAYQVLATE GYKSSGSSNV TVW

SEQ ID NO. 8

DNA :

1 ATGTTTAAGT TTAAAAAGAA TTTCTTAGTT GGATTATCGG CAGCTTTAAT GAGTATTAGC  
61 TTGTTTTTCGG CAACCGCCTC TGCAGCTAGC ACAGACTACT GGCAAAATTG GACTGATGGG  
121 GGCGGTACCG TAAACGCTGT CAATGGGTCT GCGCGGAATT ACAGTGTTAA TTGGTCTAAT  
181 ACCGGAATTT TTGTTGTTGG TAAAGGTTGG ACTACAGGTT CGCCATTTAG GACGATAAAC  
241 TATAATGCCG GAGTTTGGGC GCCGAATGGC AATGGATATT TAACTTTATA TGGTTGGACG  
301 AGATCACCTC TCATAGAATA TTATGTAGTG GATTCATGGG GTACTTATAG ACCTACTGGA  
361 ACGTATAAAG GTACTGTAAA AAGTGATGGG GGTACATATG ACATATATAC AACTACACGT  
421 TATAACGCAC CTTCCATTGA TGGCGATCGC ACTACTTTTA CGCAGTACTG GAGTGTTCGC  
481 CAGTCGAAGA GACCAACCGG AAGCAACGCT GCTATCACTT TCAGCAATCA TGTGAACGCA  
541 TGGAAGAGCC ATGGAATGAA TCTGGGCAGT AATTGGGCTT ACCAAGTCCT CGCGACAGAA  
601 GGATATAAAA GTTCCGGAAG TTCTAACGTA ACAGTGTTGT AA

F0000155-100101

Mutant XM2 :

Seq ID No. 9

AA :

MFKFKQFLV GLSAALMSIS LFSATASAAS TDYQONWIDG GGTVNAVNGS GGNYSVNWSN  
TGNFVVGKGW TTGSPFRTIN YNAGVWAPNG NGYLTLYGWT RSPLIEYYV DSHGTYRPTG  
TYKGTVKSDG GTYDIYTTTR YNAPSIDGDN TTFTQYWSVR QSKRPTGSNA AITFSNEVNA  
WKSHGMNLGS NWAYQVLATE GYKSSGSSNV TVW

Seq ID No. 10

DNA :

1 ATGTTTAAAGT TTAAAAAGAA TTTCTTAGTT GGATTATCGG CAGCTTTAAT GAGTATTAGC  
61 TTGTTTTTCGG CAACCGCCTC TGCAGCTAGC ACAGACTACT GGCAAATTG GACTGATGGG  
121 GCGGTTACCG TAAACGCTGT CAATGGGTCT GCGGGAATT ACAGTGTAA TTGGTCTAAT  
181 ACCGGAAATT TTGTTGTTGG TAAAGGTTGG ACTACAGGTT CGCCATTAG GACGATAAAC  
241 TATAATGCCG GAGTTTGGGC GCCGAATGGC AATGGATATT TAACTTTATA TGGTTGGACG  
301 AGATCACCTC TCATAGAATA TTATGTAGTG GATTCATGGG GTACTTATAG ACCTACTGGA  
361 ACGTATAAAG GTACTGTAAA AAGTGATGGG GGTACATATG ACATATATAC AACTACACGT  
421 TATAACGCAC CTTCCATTGA TGGCGATAAT ACTACTTTTA CGCAGTACTG GAGTGTTCGC  
481 CAGTCGAAGA GACCAACCGG AAGCAACGCT GCTATCACTT TCAGCAATCA TGTGAACGCA  
541 TGGAAGAGCC ATGGAATGAA TCTGGGCAGT AATTGGGCTT ACCAAGTCCT CGCGACAGAA  
601 GGATATAAAA GTTCCGGAAG TTCTAACGTA ACAGTGTGGT AA

TOTAL 5579860

Mutant XM3 :

Seq ID no. 11

AA :

MFKEKKNFLV GLSAALMSIS LFSATASAAS TDYWQNWIDG GGTVNAVNGS GGNYSVNWSN  
TGNFVVGKGW TTGSPFRTIN YNAGVWAPNG NGYLTLYGWT RSPLIEYYV DSWGTYRPTG  
TYKGTVKSDG GTYDIYTTTR YNAPSIDGDN TTFTQYWSVR QSKRPTGSNA TITFSNHVNA  
WKSHGMNLGS NWAYQVMATE GYQSSGSSNV TVW

Seq ID no. 12

DNA :

1 ATGTTTAAAGT TAAAAAGAA TTTCTTAGTT GGATTATCGG CAGCTTTAAT GAGTATTAGC  
61 TTGTTTTTCGG CAACCGCCTC TGCAGCTAGC ACAGACTACT GGCAAAATTG GACTGATGGG  
121 GCGGGTACCG TAAACGCTGT CAATGGGTCT GCGGGGAATT ACAGTGTTAA TTGGTCTAAT  
181 ACCGGAAATT TTGTTGTTGG TAAAGGTTGG ACTACAGGTT CGCCATTTAG GACGATAAAC  
241 TATAATGCCG GAGTTTGGGC GCCGAATGGC AATGGATATT TAACTTTATA TGGTTGGACG  
301 AGATCACCTC TCATAGAATA TTATGTAGTG GATTCATGGG GTACTTATAG ACCTACTGGA  
361 ACGTATAAAG GTACTGTAAA AAGTGATGGG GGTACATATG ACATATATAC AACTACACGT  
421 TATACGCAC CTTCCATTGA TGGCGATAAT ACTACTTTTA CGCAGTACTG GAGTGTTCGC  
481 CAGTCGAAGA GACCAACCGG AAGCAACGCT ACAATCACTT TCAGCAATCA TGTGAACGCA  
541 TGGAAGAGCC ATGGAATGAA TCTGGGCAGT AATTGGGCTT ACCAAGTCAT GCGACAGAA  
601 GGATATCAAA GTAGTGAAG TTCTAACGTA ACAGTGTGGT AA

FOOTNOTES: 55-100-10

**A CHAIN of inhibitor**

Sequence source: Wheat flour xylanase inhibitor

N-terminal:

GAPVARAVEAVAPFGVCYDTKTLGNNLGGYAVPNV (35aa) SEQ ID NO. 13

C-terminal:

KRLGFSRLPHFTGCGGL (17aa) SEQ ID NO. 14

**B CHAIN of inhibitor**

Sequence source: Wheat flour xylanase inhibitor

N-terminal:

LPVPAPVTKDPATSLYTIPFH (21aa) SEQ ID NO. 15

Lys-C digested Chain B:

LLASLPRGSTGVAGLANGLALPAQVASAQK (31aa) SEQ ID NO. 16

GGSPAHYISARFIEVGDTRVPSVE (24aa) SEQ ID NO. 17

VNVGVLAACAPSK (13aa) SEQ ID NO. 18

VANRFLCLPTGGPGVAIFGGGPVWPQFTQSMPYTLVVVK SEQ ID NO. 19

TOTOT 5515350